Adrian C. **Lo**

Neuroscientist, Data Analyst

June 30, 1984 (Belgium)

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About Me

I have a background in theoretical psychology and **statistics**. During the last 5 years I studied and analyzed rodent behavior and molecular biology, but also gained expertise in developing **R programs**, **shiny apps** and **automated reports**. With these tools, I improved the speed and efficiency of data-processing for myself as well as colleagues.

Languages

- Dutch (native) ●●●●●
- English ●●●●●
- French ●●●●○
- German ●○○○○

Computer Skills

- R ●●●●●
- R Markdown ●●●●●
- Visualization (ggplot2) ●●●●●
- Shiny ●●●○○
- Machine Learning ●●●○○
- SQL ●●●○○
- Python ●●●○○
- HTML ●●○○○
- SAS ●●○○○
- LaTeX ●●○○○

Working Experience

2016 – present — **Neuroscientist** — Université de Lausanne, Switzerland
Post-doctoral research focused on understanding the role of the RNA binding protein FXR2P in status epilepticus: Behavioral and molecular evaluation (Laboratory of Prof. Claudia Bagni)

2014 – 2015 — **Neuroscientist** — KU Leuven, Belgium
Post-doctoral research on cue competition and contextual fear learning in rodents and humans. (Laboratory of Prof. Bram Vervliet)

Education

2008 – 2013	PhD student, Neuroscientist	KU Leuven, Belgium
2003 – 2008	Master of Science in Theoretical Psychology	KU Leuven, Belgium

Certificates and Courses

12/2019	Advanced R Shiny	SIB, Switzerland
09/2018	Introduction to Data Analysis with Python	EPFL Extension School, Switzerland
06/2018	Statistical Methods for Big Data in Life Sciences and Health with R	SIB, Switzerland
12/2020	Databases and SQL for Data Science	IBM, Coursera
05/2015	Text Mining with R	KU Leuven, Belgium
01/2019	Data Management Plan	SIB, Switzerland
10/2018	Project Management	EPFL, Switzerland
09/2015	Introduction to SAS	LSTAT, Belgium
09/2013	FELASA C - Laboratory Animal Sciences	KU Leuven, Belgium

My R programs portfolio

meaR (public repository)
The text files from Multi-Electrode Arrays contain *in vitro* electrophysiological measurements embedded with text. The numeric **data are extracted** from the text file and a master datafile is assembled. meaR then performs calculations for a variety of electrophysiological parameters and visualizes spike and burst activity for all 60 electrodes over time

phenotyper (private repository, open for discussion)
For the processing and analysis of Phenotyper data, we can use a cloud service upon payment. Through **reverse engineering**, I designed the phenotyper program that performs similarly to the cloud service and calculates additional behavioral parameters

easyPCR (private repository, open for discussion)
Mouse genotyping is a tedious process that requires several steps prior to the wet lab work: identification of the sample's model, pre-mix calculations, and planning of the assembly plates for PCR and electrophoresis. These can easily take up to half a day time. With easyPCR, an **automated report** is created with R Markdown that contains all these steps ready for the user to follow and optimized for the QIAxcel apparatus

unidamr (private repository, open for discussion)
Through an **interactive Shiny dashboard**, behavioral data from *Drosophila* are analyzed, categorized as either sleep or awake state, and several parameters are calculated and analyzed

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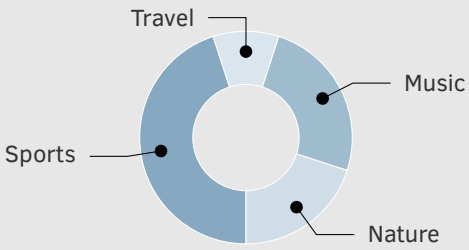
Soft Skills

Extra-Curricular Activities



Driver's license: B (2003)

Teaching Experience

09/2019 **"DNF Coding Club": Unofficial Course at my department** — Université de Lausanne, Switzerland
How to use R for data import, manipulation, visualization and analysis: for PhD students

09/2015 **Workshop at Summer School** — KU Leuven, Belgium
Subject: "The use of rodent models in fear conditioning, learning and memory

2013 **Bachelor Course at KU Leuven** — B-KUL-P0M20B
How to use SPSS for basic data manipulation and interpret SPSS output

Conferences and Presentations

2018 **NCCR-SYNAPSY Conference** — Geneva, Switzerland
Cognitive flexibility in a mouse model for Fragile X Syndrome

2014 **RIKEN Brain Science Institute** — Tokyo, Japan
Treatment with tauroursodeoxycholic acid modulates γ-secretase activity and rescues memory deficits in APP/PS1 mice, an AD mouse model

2012 **International Stockholm/Springfield symposium on advances in Alzheimer's disease** — Stockholm, Sweden
Behavioural effects of selenium in mouse models of Alzheimer's disease

2010 **Forum of European Neurosciences** — Amsterdam, The Netherlands
Reversible changes in neurocognitive performance and hippocampal synaptic plasticity in tau mutant mouse lines

Publications (5 most relevant)

For the full list, please click here

2019 ***Nature Communications***
The autism- and schizophrenia-associated protein CYFIP1 regulates bilateral brain connectivity and behaviour
Domínguez-Iturza N, **Lo AC**, Shah D, Armendáriz M, Vannelli A, Mercaldo V, Trusel M, Li KW, Gastaldo D, Santos AR, Callaerts-Vegh Z, D'Hooge R, Mameli M, Van der Linden A, Smit AB, Achsel T, Bagni C.

2017 ***Nature Communications***
The non-coding RNA BC1 regulates experience-dependent structural plasticity and learning
Briz V, Restivo L, Pasciuto E, Juczewski K, Mercaldo V, **Lo AC**, Baatsen P, Gounko NV, Borreca A, Girardi T, Luca R, Nys J, Poorthuis RB, Mansvelder HD, Fisone G, Ammassari-Teule M, Arckens L, Krieger P, Meredith R, Bagni C.

2014 ***Neuropharmacology***
SSP-002392, a new 5-HT4 receptor agonist, dose-dependently reverses scopolamine-induced learning and memory impairments in C57Bl/6 mice
Lo AC, De Maeyer JH, Vermaercke B, Callaerts-Vegh Z, Schuurkes JA, D'Hooge R.

2013 ***Neuropharmacology***
Dose-dependent improvements in learning and memory deficits in APPPS1-21 transgenic mice treated with the orally active Aβtoxicity inhibitor SEN1500
Lo AC, Tesseur I, Scopes DI, Nerou E, Callaerts-Vegh Z, Vermaercke B, Treherne JM, De Strooper B, D'Hooge R.

2013 ***Science***
Comment on "ApoE-directed therapeutics rapidly clear β-amyloid and reverse deficits in AD mouse models"
Tesseur I*, **Lo AC***, Roberfroid A, Dietvorst S, Van Broeck B, Borgers M, Gijsen H, Moechars D, Mercken M, Kemp J, D'Hooge R, De Strooper B. * authors contributed equally